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Remarks

Terminal disclaimers are submitted herewith over U.S. Patent No. 6,060,237 and U.S. Patent No. 6,355,429.

Claims 1-8 have been rejected under 35 U.S.C. §102 (e), as allegedly being anticipated by Humphries, U.S. Patent 4,849,330 ("the '330 patent").

The Examiner rejected claims of the parent application U.S. Serial No. 09/425,072 over the same reference. Applicants submitted arguments explaining the patentability of the claims in the parent case because Humphries does not disclose a support having an optically smooth, flat, light-reflecting surface, and having a nucleic acid complementary to the target nucleic acid bound thereto. The Examiner accepted the arguments and the claims were passed to allowance. The present claims recite the same limitation. Therefore, the Applicants request that the present claims be passed to allowance for the same reasons. Humphries does not anticipate the present claims for the same reasons explained in the parent case, and again described below.

In order to anticipate a claim, a single prior art reference must provide each and every element set forth in the claim. Furthermore, the claims must be interpreted in light of the teaching of the specification. *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990); MPEP §2131.

The instant claims relate to supports for use in detecting the presence of a target nucleic acid. The supports comprise an optically smooth, flat light-reflecting surface, and a nucleic acid complementary to said target nucleic acid bound to the surface.

In contrast, the '330 patent discloses two separate supports: a photoresponsive support that may be smooth and flat, and a facing support that may bind nucleic acid.

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Applicants respectfully submit that the Examiner has misinterpreted the '330 patent and combined these two supports into a single support.

For example, at column 3, lines 43-62, Humphries states that the photoresponsive support "will usually have at least one smooth surface,... desirably flat." This is not, however, a glass surface with bound nucleic acid, as the Examiner contends. Instead, at column 5, lines 60-67, Humphries refers to a second, facing support that may be made of glass that is "transparent, opaque, [or] translucent." The skilled artisan will understand that transparent, opaque, or translucent surfaces are not inherently light reflecting. *See, e.g., Merriam Webster's Collegiate Dictionary, 10th Edition* (transparent: having the property of transmitting light without appreciable scattering; opaque: blocking the passage of radiant energy, especially light; translucent: permitting the passage of light); *See also, MPEP § 2112* (the fact that a characteristic may occur is not sufficient to establish the inherency of that characteristic) (emphasis in original).

It is this facing surface to which one may bind DNA or RNA sequences (Humphries, column 8, lines 52-62). Following hybridization, this glass surface is "placed in juxtaposition to the photoresponsive surface, where a solution between the two surfaces provides for a redox reaction." (Humphries, column 9, lines 3-5).

Thus, Humphries does not disclose any optically smooth and flat light-reflecting surfaces to which a nucleic acid is bound. Therefore, because Humphries does not teach and suggest every limitation of the claimed invention, Applicants respectfully request that the rejection under 35 U.S.C. § 102(e) be reconsidered and withdrawn.

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Claims 1-3 and 7-8 are rejected under 35 U.S.C. 102(e) as allegedly being unpatentable over U.S. Patent No. 4,766,062 to Diamond. The Applicants note that the Examiner rejected claims in the parent case U.S. Serial No. 09/425,072 as obvious over Humphries and Diamond combined. Applicants submitted arguments explaining the patentability of the claims in the parent case because the references do not disclose a support having an optically smooth, flat, light-reflecting surface, and having a nucleic acid complementary to the target nucleic acid bound thereto. The Examiner accepted the arguments and the claims were passed to allowance. The present claims recite the same limitation. Therefore, the Applicants request that the present claims be passed to allowance for the same reasons.

The Applicants respectfully point out that the Examiner seems to be inappropriately asserting that the burden is on the Applicant to establish that Diamond does not disclose the claimed invention (Office Action mailed 4/4/2003, p. 6). But the burden is on the Examiner to show that Diamond teaches each and every element as set forth in the claim (MPEP § 2131).

Diamond does not disclose any flat surface as a support. In fact, the only surfaces Diamond discloses are curved surfaces, such as the walls of a test tube (Col. 6, line 41), or particles or beads (Col. 6, line 43). Furthermore, as noted above, the fact that a characteristic may occur is not sufficient to establish the inherency of that characteristic. (MPEP 2112) (emphasis in original). Since Diamond does not disclose each and every element as set forth in the claims, Diamond does not anticipate the cited claims.

35 U.S.C. §103

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Claims 2 and 7 have been rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over Humphries *et al.* in view of Diamond, US Patent No. 4,766,062 ("the '062 patent").

As noted above, this rejection was also made in the parent case U.S. Serial No. 09/425,072, and the claims later passed to allowance when it was pointed out that the references do not disclose a support having an optically smooth, flat, light-reflecting surface, and having a nucleic acid complementary to the target nucleic acid bound thereto. The present claims recite the same limitation. Therefore, the Applicants request that the present claims be passed to allowance for the same reasons.

Nevertheless, as discussed above, Humphries (the '330 patent) does not disclose any supports comprising an optically smooth and flat light-reflecting surface to which a nucleic acid is bound. Furthermore, there is nothing of record indicating that the Examiner believes such supports are suggested by Humphries beyond the mistaken belief that such supports are explicitly disclosed. Diamond does not cure this deficiency in the asserted *prima facie* case, since Diamond does not disclose a support having an optically smooth, flat, light-reflecting surface, and having a nucleic acid complementary to the target nucleic acid bound thereto.

Furthermore, modifying Humphries according to Diamond would change the principle of operation of Humphries, since Humphries operates according to a principle of measuring the flow of electrical current through a conducting medium (Humphries, Col. 2, lines 53-58). Diamond operates according to a principle of the displacement of labeled nucleotides (Diamond, Col. 3, lines 14-19). Since modifying Humphries according to

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Diamond would change the principle of operation of Humphries, the references do not render the claims obvious (MPEP 2143.01).

Therefore, because no *prima facie* case of obviousness has been established, Applicants respectfully request that the rejection under 35 U.S.C. §103 be reconsidered and withdrawn

Conclusion

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow.

After amending the claims as set forth above, claims 1-8 are now pending in this application.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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